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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Seth Haberman

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EXAMINER

TRAN, HAI V

ART UNIT

PAPER NUMBER

2611

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/735,983	Applicant(s) HABERMAN ET AL.	
	Examiner Hai Tran	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 02/07/2005 have been fully considered but they are not persuasive.

Claim 1, Applicant argues, "Hurst is not increasing a data rate of a plurality of stream, Hurst is simply throwing away the unused contents of a synchronization buffer."

In response, the examiner respectfully disagrees with Applicant assertion because Hurst by flushing out the synchronization buffer, Hurst actually increases the data rate by skipping the presently buffered GOP in the to-stream to the next in-point.

Applicant further discloses, "Hurst is describing leaving audio gaps in spliced video to maintain alignment. Hurst actually introduces an audio mute... This is not seamless switching as disclosed by the present invention. The present invention recites that there are gaps between the plurality of synchronized segments in the data streams. These gaps are what assist the present invention in performing seamless switching, which is not what Hurst discloses."

In response, the Examiner respectfully disagrees with Applicant because Hurst (Col. 2, lines 64-67+) discloses that the invention may be used for seamless splicing of bit streams and further defines that seamless splicing means seamless butt-splicing of two streams to form a resultant output stream that produces a continuous, undisturbed flow of information (e.g., video or audio without glitches or artifacts). Accordingly, Hurst provides gaps in the plurality of data streams between said end points and said starting point (Col. 18, lines 48-56), so to maintain lip sync (e.g., the creation of sequence from

a succession of short splice segments). Thus, Hurst's gaps assists in performing seamless switching.

Claim 13, Applicant argues, "Hurst is a splicing system, not a system for preparing data streams for a (subsequent) receiver to switch between such data streams, and none of these features are disclosed or inherent in Hurst."

In response, the Examiner states in the previous Office Action (page 3) that "a content preparation component" feature is inherent in Hurst because the received bit streams must be prepared in advance so that Hurst's system is able to detect the in-point and the out-point of the to-stream and the from-stream so that the system is able to switch between MPEG streams seamlessly, as disclosed "...To accomplish this inclusion of entrance and exit indicia, the transport multiplexer used to generate the transport stream to be subsequently spliced must be provided with information identifying packets associated with, e.g., I-frames." see Col. 19, lines 65-Col. 21, lines 23.

Claim 16, Applicant argues, "Freeman discloses changing a buffer fill/empty rate, not changing data rate of a data stream that is entering the buffer".

In response, the examiner respectfully disagrees with applicant because before the switching from stream A to stream C, the video buffer 164 is providing maximum buffering to the video stream A, thereby increasing the rate of the video stream A and at the meantime the video buffer 165 is providing with minimum buffering of video stream C. After the seamless switching from video A to video C, the buffer 165 of the video stream C will begin to maximize the buffering of the video stream C by altering its fill/empty rate (rapidly filled), thereby increasing the rate of the video stream C while

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decreasing the rate of the video stream A by providing the video buffer 164 with minimum buffering of video stream A. Thus, Freeman changes data rate of data stream entering the buffers 165 and 165 of Fig. 4.

Claims 15 and 10, Applicant argues, "Zhang does not disclose changing the multiplexing for the plurality of streams. Zhang merely disclose re-encoding the streams (which physically changes the contents of the stream), not changing the multiplexing of the streams (which does not affect the contents of the data streams)"

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., changing the multiplexing of the streams which does not affect the contents of the data streams) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

Moreover, Zhang discloses that by recoding on all the video programs/streams in the same multiplex (statistically multiplexed bit streams) so to achieve rate matching, thereby changing the multiplexing for the plurality of streams (Col. 11, lines 55-Col. 12, lines 30).

For at least the reason set forth above, the rejection is maintained.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1- 2, 7-9, and 13-15 are rejected under 35 U.S.C. 102(e) as being unpatentable by Hurst Jr. (US 6038000).

Claim 1, Hurst discloses a method of preparing a plurality of data streams to allow seamless switching between said data streams by a switching device, wherein said switching device includes data stream buffering for an output data stream, said method comprising the steps of (Col. 2, lines 63-Col. 3, lines 65+):

providing a plurality of data streams (Source 1 and 2 of Fig. 1), said data streams including data which is divided into segments, wherein said segments include synchronized starting points and end points on all of said plurality of data streams (Col. 3, lines 14-Col. 4, lines 3 and Col. 5, lines 30-56);

increasing a data rate (320A is flushed) of said plurality of data streams at a time before an end point of a segment (Fig. 2, Col. 11, lines 3-11); and

providing gaps in said plurality of data streams between said end points (out point) and said starting points (in-point) (Fig. 5A-C; Col. 18, lines 48-60).

Claim 2, Hurst further discloses including the step of inserting trigger gap indicators in said plurality of data streams proximate said end points is further met by

Hurst because Hurst must insert trigger gap indicators (black-screen or time-related decision or event) so the system could detect and a splice a decision could be made at the end of the from stream (Col. 6, lines 9-36).

Claim 7, Hurst further discloses wherein said plurality of data streams include multimedia data streams (video see Col. 16, lines 25-65+, audio see Col. 17, lines 53-65+ and auxiliary data see Col. 19, lines 35-65+).

Claim 8, Hurst further discloses wherein said plurality of data streams include MPEG-2 encoded data streams (Col. 2, lines 53-65+).

Claim 9, Hurst further discloses wherein said plurality of data streams are multiplexed in an MPEG-2 transport stream (Col. 21, lines 15-24).

Claim 12 Hurst further discloses the step of switching from one of said plurality of data streams to another one of said plurality of data streams at an end point of a segment by said switching device (Fig. 3).

Claim 13, Hurst discloses A system for preparing a plurality of data streams for transmission to allow a receiver receiving said transmitted data streams to seamlessly switch between said transmitted data streams (Fig. 1; Col. 2, lines 43-65+); said system comprising:

a content preparation component (Fig. 1 not shown but inherent), coupled to a source of said plurality of data streams (Compressed Bit stream Source 1 and 2), to encode content in said plurality of data streams with synchronized starting points

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and end points common to all of said plurality of data streams (Col. 3, lines 14-Col. 4, lines 3 and Col. 5, lines 30-56);

a gap creation component (Fig. 1, not shown but inherent in order to perform as disclosed), coupled to said content preparation component, said gap creation component to insert gaps in said plurality of data streams between said end points (Out-Point) and said starting points (In-Point) (Fig. 5A-C; Col. 18, lines 48-60).

a data rate control component (Fig.1, not shown but inherent), coupled to said gap creation component, to dynamically control data rates of said plurality of data streams (Fig. 2, Col. 11, lines 3-11);.

Claim 14, trigger insertion component (not shown but inherent), coupled to said data rate control component, said trigger insertion component to insert trigger messages into said plurality of data streams is further met by Hurst because Hurst must insert trigger gap indicators (black-screen or time-related decision or event) so the system could detect the event in which a splicing decision could be made at the end (out-point) of the from stream (Col. 6, lines 9-36).

Claim 15, Hurst further discloses wherein said plurality of data streams are transmitted using an MPEG-2 compliant transport stream, and said data rate control component controls data rates of said data streams in said transport stream (Col. 2, lines 50-62; Col. 3, lines 23-65; Col. 12, lines 44-56; Col. 13, lines 4-25; Col. 14, lines 63-Col. 15, lines 21 and Col. 16, lines 25-65+).

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 16-18 are rejected under 35 U.S.C. 102(b) as being unpatentable by Freeman et al. (US 5724091).

Claim 16, Freeman discloses a switching apparatus (Fig. 4 and 5), to switch between a plurality of multiplexed data streams, wherein said data streams are prepared such that each data stream includes synchronized starting points and end points, with gaps between end points and starting points (VBI), and wherein the data rate of the data streams is increased at a time before the synchronized end points, and the data rate for the data streams is decreased at a time after the gaps (Col. 13, lines 15-Col. 15, lines 53), said switching component comprising:

a switch controller component (VBI switch 180 of Fig. 4 or microprocessor of Fig.5; Col. 15, lines 1-5);

a data stream receiver component (102A-B of fig. 4 and 102 of Fig. 5), to receive the multiplexed data streams;

a demultiplexer component(106A-B of Fig. 4 or 106 of Fig. 5), coupled to said data stream receiver component and said switch controller component (180 of Fig. 4 or 108 of Fig. 5), to select at least one of said multiplexed data streams in response to said switch controller component (Col. 14, lines 5-10 and Col. 15, lines 1-5);

a buffer component (164/165 of Fig. 4, 190 of Fig. 5) coupled to said a demultiplexer component, to receive said selected at least one data stream; and to buffer said at least one data stream when said data rate for said data stream is increased (Col. 13, lines 45-Col. 14, lines 15 and Col. 14, lines 60-Col. 15, lines 53).

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Claim 17, Freeman further discloses wherein said switching apparatus is a receiver for MPEG encoded media streams (Col. 15, lines 34-43).

Claim 18, Freeman further discloses wherein said switching apparatus is a set top box (Col. 9, lines 63-65+).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3-6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hurst Jr. (US 6038000) in view of Zhang et al. (US 6611624).

Claim 3, Hurst does not clearly disclose "wherein the step of increasing a data rate includes increasing a bandwidth of said plurality of data streams."

Zhang discloses wherein the step of increasing a data rate includes increasing a bandwidth of said plurality of data streams (Col. 12, lines 10-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hurst with Zhang so the decoder buffer does not overflow or underflow, regardless whether it is at splicing point or before/after the splicing.

Claim 4, Hurst does not clearly disclose, "wherein said plurality of data streams are multiplexed."

Zhang discloses wherein said plurality of data streams are multiplexed (Col. 12, lines 10-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hurst with Zhang so that the overall bit rate of the multiplex fits within a bandwidth.

Claim 5, Zhang further discloses wherein the step of increasing a data rate includes changing the multiplexing for said plurality of data streams (Col. 12, lines 10-25).

Claim 6, Hurst does not clearly disclose, "wherein the step of increasing a data rate includes compressing said data of said plurality of data streams."

Zhang discloses wherein the step of increasing a data rate includes compressing said data of said plurality of data streams by recoding (bit reduction) on all video programs (Col. 11, lines 44-Col. 12, lines 30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hurst with Zhang so to shape the bit stream rate of the streams to fit within the available bandwidth.

Claim 10, Hurst does not clearly disclose, "wherein the step of increasing a data rate includes changing the multiplexing for said MPEG-2 transport stream."

Zhang discloses wherein the step of increasing a data rate includes changing the multiplexing for said plurality of data streams (Col. 12, lines 10-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention

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was made to modify Hurst with Zhang so that the overall bit rate of the multiplex fits within a bandwidth.

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hurst.

Claim 11_7, Hurst does not clearly disclose, "wherein said plurality of data streams include AC3 encoded data streams."

Official notice is taken that the use of AC3 encoder for encoding audio data is well known in the art, i.e., Dolby surround sound. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hurst to use an AC3 encoder so to take the advantage of the most widely adopted high-end audio signal compression technique of AC-3 multi-channel high-fidelity audio signal compression invented by Dolby Inc.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Tran whose telephone number is (571) 272-7305. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher C. Grant can be reached on (571) 272-7294. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HT:ht
06/20/2005



HAITRAN
PRIMARY EXAMINER